



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Adress: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,470	06/01/2006	Thomas Lerche	WUE-58	3887
7590	11/24/2010		EXAMINER	
Thomas J. Burger Wood Herron & Evans 2700 Carew Tower 441 Vine Street Cincinnati, OH 45202-2917			KOSANOVIC, HELENA	
			ART UNIT	PAPER NUMBER
			3749	
			MAIL DATE	DELIVERY MODE
			11/24/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/581,470	<b>Applicant(s)</b> LERCHE, THOMAS
	<b>Examiner</b> HELENA KOSANOVIC	<b>Art Unit</b> 3749

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(o).

#### Status

- 1) Responsive to communication(s) filed on 09 September 2010.  
 2a) This action is FINAL.      2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 3,5,8-11 and 22 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 3,5,8-11,22 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/08)  
     Paper No(s)/Mail Date 2/25/10
- 4) Interview Summary (PTO-413)  
     Paper No(s)/Mail Date: \_\_\_\_\_  
 5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_

#### **DETAILED ACTION**

##### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/9/10 has been entered.

##### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 11 and 22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, amended claim 11 recites "wherein the angle of the air jet with respect to the vertical direction is **continuously variable**" (emphasis added). While the original disclosure provides support for the

angle being variable depending on the temperature. Since the temperature is not continuously variable than the angle cannot be continuously variable too.

7. Moreover, claim 11 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Specifically, amended claim 11 recites the following limitation: "altering the direction *and* the impulse of the air jet according to a change of form of the measured temperature". It is not clear how the whole device 20, 22 including a guide pipe 32 can rotate due to the change of the temperature and change the cross section of the element 32 in order to change the impulse of the air jet, due to the same temperature sensor. Consequently, the disclosure provided in this application is insufficient to enable one of ordinary skill in the art to make and/or use a *single structure* to alter both the direction and the *impulse* of the air jet via *rotation of the structure* based upon a measured temperature of the air jet.

8. Furthermore, claim 22 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is not clear how at the same temperature sensor can change both the rotation of the whole device and at the same time cross section of the guide pipe.

***Claim Rejections - 35 USC § 103***

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. **Claims 3, 5, 8-9, 11 and 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over McCallister (US 2,859,803) in view of Japanese Patent No. 60126536 A ("JP 536"). These two references, when considered together, teach all of the elements recited in **claims 2-5, 7-9, and 11-13** of this application.

15. In particular, claims 11 and 22 of this application is obvious when McCallister is viewed in light of the JP '536 reference. McCallister discloses the following limitations of the claimed invention, including: directing at least one air jet into the aircraft cabin (aircraft cabin 1 – see Fig. 2), with a guide pipe (fresh air outlet 13) so as to provide fresh air to the aircraft cabin (1). Refer to McCallister, Figure 2; column 2, lines 31-34 and 56-59.

However, claim 11 of this application further discloses the steps of: measuring the temperature of the air jet; and altering the direction and the impulse of the air jet depending upon the measured temperature, wherein the altering occurs via rotation of a structure including a rotation device. McCallister does not disclose these additional steps.

The JP '536 reference, although, teaches a method for adjusting the angle of an air-blowing outlet, wherein shape memory alloy elements (7, 11) measure/sense the temperature of the air jet discharged from air outlet (1) with a temperature sensor having a temperature dependent form (via at list shape memory alloy 10, fig. 1, see Constitution), and then, alter the direction (by rotating airflow guide plate 2) with respect to a vertical direction (along white arrow (a), fig. 1) and the impulse (by translating airflow guide plate 2) of the air jet depending upon the measured temperature (as sensed by shape memory alloy elements 7, 11), and wherein the altering occurs via rotation of a structure (2, 4, 7, 11) including a rotation device (rotary member 4), for the purpose of automatically adjusting the discharge angle and the air speed of a supply air jet in response to the air jet temperature so that occupant comfort may be optimized during both heating and cooling modes. Regarding limitation of angle being in within the range of 10-90 degrees, the courts have held that where general condition of claim is disposed in the prior art (figures 1 and 2 show the angle of the air jet of 90 degree (fig. 1) and acute angle (fig. 2) ), it is not inventive to discover the optimum or workable range (MPEP 2144.05 IIa). See JP '536, Figures 1-2; also refer to attached English abstract for JP '536. Therefore, when McCallister is viewed in light of the JP '536 reference, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the aircraft cabin air-conditioning method of McCallister by additionally measuring the air jet temperature and altering the direction and the impulse of the air jet based upon the measured temperature, wherein the altering occurs via rotation of a structure that includes a rotation device (4), as taught by

Art Unit: 3749

the JP '536 reference, in order to automatically adjust the discharge angle and the air speed of the supply air jet in response to the air jet temperature so that passenger comfort may be optimized during both heating and cooling modes (i.e., warm air is able to reach the floor during the heating mode). Refer to the attached English abstract for JP '536.

4. In regard to claim 3, McCallister further discloses that the air jet is directed into the aircraft cabin (1) from a ceiling area (as shown in Fig. 2). See McCallister, Figure 2. Consequently, McCallister in view of the JP '536 reference also renders the limitations set forth in claim 3 obvious.

5. In regard to claim 5, the modified air-conditioning method of McCallister further teaches that, as the temperature of the air jet rises, its impulse is increased (during the heating mode, the airflow guiding plate 2 is translated inward by the action of shape memory alloy element 7, thereby increasing the blown air speed). See JP '536, Figures 1-2; also refer to attached English abstract for JP '536. Therefore, McCallister in view of the JP '536 reference also renders the limitations set forth in this claim obvious.

6. In regard to claim 8, the modified aircraft cabin air-conditioning system of McCallister further teaches that the component (7, 11) includes a shape memory alloy. See the attached English abstract for JP '536. Consequently, McCallister in view of the JP '536 reference also renders the limitations set forth in claim 8 obvious.

7. Claim 9 of this application also is obvious when McCallister is viewed in light of the JP '536 reference. As described above, McCallister, as modified by the JP '536 reference, discloses all the elements of base claim 7, the claim upon which this claim

Art Unit: 3749

depends. However, claim 9 of this application further discloses that the temperature sensing component has a bi-metallic element. McCallister, as modified by the JP '536 reference, does not expressly disclose this additional limitation. Although, at the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to use either the shape memory alloy disclosed in the JP '536 reference for the temperature sensing component, or alternatively, a bi-metallic element for the temperature sensing component as recited in claim 9 of this application, because the applicant has not disclosed that using a bi-metallic element for the temperature sensing component provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected the applicant's invention to perform equally well with a temperature sensing element in the form of a shape memory alloy, as taught by the JP '536 secondary reference, because a shape memory alloy also readily responds to changes in air temperature by altering its shape. Refer to the attached English abstract for JP '536.

8. **Claim 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over McCallister (US 2,859,803) in view of Japanese Patent No. 60126536 A ("JP 536") and further in view of Hutton (US 2004/0187234)

McCallister in view of JP '536 teaches the invention as discussed above but is silent about having a second temperature sensor in the cabin away from the guide pipe.

Hutton teaches the temperature sensor inside of the cabin of the aircraft (see paragraph 0073).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have McCallister in view of JP '536 invention modified with the Hutton another temperature sensor not located in the guide pipe but inside the cabin away from said guide pipe in order to provide heating at a constant temperture that is reliable so as to prevent freezing (see and of paragraph 0073).

***Response to Arguments***

Applicant's arguments filed 9/9/10 have been fully considered but they are not persuasive.

Regarding argument about new claim 22 and dependent claim 10, this argument is moot because the examiner applied new art (see rejection of claim 10 discussed above) in order to cover new limitation.

Regarding argument about Martinez reference the examiner does not rely upon said reference in this office action, and therefore the argument is moot.

Regarding arguments about newly amended claims 11 and 22 the examiner notice that all limitations are covered with McCallister in view of JP '536 patents as discussed above. Regarding "continuously variable control of the angle of the air jet" argument the examiner notice that the instant application structure does not continuously control the angle in time. It seems that the angle is controlled "continuously" as soon as the temperature is changed. As seen in that light the applied prior art reference also provides continuously control of the angle.

***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HELENA KOSANOVIC whose telephone number is (571)272-9059. The examiner can normally be reached on 8:30-5:00, Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve McAllister can be reached on 571-272-6785. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Helena Kosanovic/  
Examiner, Art Unit 3749

/Henry Yuen/  
Supervisory Patent Examiner,  
TC 3700